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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/904,147	07/11/2001	Shinsuke Mori	JP9-2000-0133US1	2401
35195	7590	12/15/2005	EXAMINER	
FERENCE & ASSOCIATES 409 BROAD STREET PITTSBURGH, PA 15143			SHORTLEDGE, THOMAS E	
			ART UNIT	PAPER NUMBER
			2654	

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/904,147

Applicant(s)

MORI ET AL.

Examiner

Thomas E. Shortledge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 7, 13 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-12 and 14-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/11/2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

1. This communication is in response to Response to Restriction Requirement filed on 08/01/2005.

### ***Election/Restrictions***

2. Applicant's election with traverse of Group I (claims 1-6, 8-12 and 14-20) in the reply filed on 08/01/2005 is acknowledged. The traversal is on the ground(s) that the claim sets of Groups I, II and III are capable of use together, can be practiced together, and are connected in design and operation of the invention. This is not found persuasive because each of the groups would require a different search from the other, and since the art applied to one group will not be necessary applicable to another group, the groups would then require a different rejection based on different art, placing undue burden on the examiner..

The requirement is still deemed proper and is therefore made FINAL.

### ***Double Patenting***

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory

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obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-6, and 15-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 10/226,564. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-7 and 15-21 of the instant application recite a word prediction method, using a partial analysis tree structure of the sentence structure around the target word to predict the target word, and claims 1-6 of copending Application No. 10/226,564 recite a word prediction method using the word history of the target word to predict the target word, where the word history contains analysis trees representing each possible prediction.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6, and 15-20 rejected under 35 U.S.C. 102(b) as being anticipated by Chelba et al. (Exploiting Syntactic Structure for Language Modeling).

As to claims 1, 15, 17 and 19, Chelba et al. teach:

a computer readable program (col. 1, page 225);

specifying a sentence structure consisting of multiple words, including a target word to be predicted (specifying a word phrase, and predicting a word within the phrase, page 225, col. 2, through page 226, col. 1);

employing said sentence structure to select a word and/or a word sequence that has a modification relationship with said target word to be predicted (predicting the word based on the word sequence proceeding the word, page 226, col. 226); and

predicting said target word based on said word and/or word sequence that is selected (predicting the word based on the partial parse of the word history , col. 2, page 225).

As to claim 2, Chelba et al. teach said word and/or word sequence constitute partial analysis tree structure in said sentence structure (using partial pareses of the word history to predict the word, col. 2, page 225).

As to claim 3, Chelba et al. teach when multiple words and/or word sequences are selected, word prediction is preformed based on said words and/or word sequences that are selected (the word prediction is based on the word history, which can include a single word, or multiple words, col. 2, page 225, through col. 1, page 226).

As to claims 4, 16, 18 and 20, Chelba et al. teach:  
a computer readable program (col. 1, page 225);  
specifying a modification of a word to be predicted by a different word and/or word sequence (specifying a word phrase, and predicting a word within the phrase, page 225, col. 2, through page 226, col. 1);  
prediction said word using said different word/or word sequence that is specified (the word prediction is based on the word history, which can include a single word, or multiple words, col. 2, page 225, through col. 1, page 226); and  
a transmitter, which reads said program from said storer and transmits said program (using the program within a automatic speech recognition device, col. 1, page 225).

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As to claim 5, Chelba et al. teach said modification includes a modification direction, and said word to predicted modifies a prior word (the word history is used to predict a word to the right of the last word within the history, where that word is able to modify a proceeding word, col. 2, page 225).

As to claim 6, Chelba et al. teach when multiple modifications are established between said word to be predicted and said different word and/or word sequence, a word is predicted for each of said modifications (the word prediction is based on the word history, which can include a single word, or multiple words, col. 2, page 225, through col. 1, page 226).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 8, 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chelba et al.

As to claim 8, Chelba et al. teach:

a predictor which employs a structure of a sentence consisting of multiple words, including a word to be predicted to select a word/or a word sequence that has a modification relationship with said word to be predicted, and which predicts said word based on said word and/or said word sequence that is selected (a predictor that uses the word history within a phrase to predict the needed word, where the word history has a relationship with the word to be predicted, a different history would predict a different word, col. 2, page 225, through col. 1, page 226).

Chelba et al. do not explicitly teach a store which stores a dictionary wherein text data that have been learned is written. However, the system is able to create all possible binary branching parses with all possible headword and no-terminal label assignments for the words within the word sequence. These partial parses are then used to predict the word. It would be obvious to one of ordinary skill in the art at the time of the invention that since these partial parse trees are created, then later used, they would be stored once they are created, creating a store wherein text data that has been learned is written.

As to claim 9, Chelba et al. teach a predictor which selects a word and/or a word sequence that has a modification relationship with a word to be predicted, and which predicts said word based on said word and/or said word sequence that is selected (specifying a word phrase, where the word history is created from the phrase, and is



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able to predict the word and its part of speech, page 225, col. 2, through page 226, col. 1).

Chelba et al. do not explicitly teach a store which stores a dictionary wherein text data that have been learned is written. However, the system is able to create all possible binary branching parses with all possible headword and no-terminal label assignments for the words within the word sequence. These partial parses are then used to predict the word. It would be obvious to one of ordinary skill in the art at the time of the invention that since these partial parse trees are created, then later used, they would be stored once they are created, creating a store wherein text data that has been learned is written.

As to claim 14, Chelba et al. teach:

a specifier which specifies a modification relationship between a word to be predicted and another word/or word sequence, and which predicts said word by employing said word/or word sequence modifying said word (specifying a word phrase, from the headword to the last word before the word to be predicted, and using the specified word phrase to predict the word, page 225, col. 2, through page 226, col. 1);

a display, which displays said word that is predicted and said modification relationship (usable within automatic speech recognition device, (col. 1, page 225), where it would be obvious to one of ordinary skill in the art, that such a device would be a computer system with a display, since the speech recognition is converted to text).

9. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chelba et al. and further in view of Kuhn.

As to claim 10, Chelba et al. do not explicitly teach for a predetermined word or word sequence based on said text data, a frequency where at another predetermined word appears is stored in said dictionary.

However, Kuhn teaches predicting the word based on its frequency of occurrence stored within a knowledge base, (col. 1, page 348).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Chelba et al. with the methods taught by Kuhn to increase the ability of a speech recognizer to identify a word by assigning higher probabilities to words that have been the most recently used, limiting the vocabulary needed, as taught by Kuhn, (page 350, col. 1 and col. 2).

As to claim 11, Chelba et al. do not explicitly teach said predictor calculates a probability value for a word sequence including a word that is predicted based on said frequency.

However, Kuhn teaches assigning higher probabilities to sequences containing words based on their frequency of use, (col. 1, page 348).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Chelba et al. with the methods taught by Kuhn to increase the ability of a speech recognizer to identify a word by assigning

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higher probabilities to words that have been the most recently used, limiting the vocabulary needed, as taught by Kuhn, (page 350, col. 1 and col. 2).

As to claim 12, Chelba et al. teach a predictor selects, as a prediction result, a word sequence having the maximum probability value (ranking and selecting the word sequences, col. 1, page 228).

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas E. Shortledge whose telephone number is (571)272-7612. The examiner can normally be reached on M-F 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TS  
10/12/05

  
**VIJAY CHAWAN**  
**PRIMARY EXAMINER**